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ABSTRACT

Parental attitudes and expectations about the use of the Internet in education are important for local school administrators and teachers to consider when the Internet reaches their classrooms because parental involvement has been shown to have a positive influence on students' academic achievement. The purpose of this study was to gather data on parents' perspectives of the use of the Internet in their children's education. Five parents involved in the Home and School Association at a Philadelphia high school were interviewed; interviews focused specifically on parental attitudes and expectations toward the use of the Internet in education. In addition, a web site questionnaire was designed to elicit data from parents worldwide. Results from both surveys revealed that many of the parents' views fall within the classification of technorealism. Parents were most impressed by the resources of information on the Internet; they also showed concern that the plethora of information would require children to be able to analyze and evaluate materials online. Parents doubted that computers in schools would lead to better academic achievement; however, they expected their children to learn technology skills that would be useful in future work places. Wasting time was another concern expressed by parents, as well as protecting children from inappropriate materials and from strangers. The interview questionnaire and Internet survey forms are appended. (AEF)

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Running head: PARENTAL EXPECTATIONS

Parental Expectations and Concerns for the Use of the Internet in Education

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Preface

When I view the world, I look through the eyes of a teacher. While reflecting on the coursework that I have completed for my Masters of Liberal Arts, I see a general characteristic emerge in the manner in which I approach the topics of my classes. This characteristic is based on what I do for a living, but it also describes who I am. This characteristic affects everything I do, everything I say, and how I view the world.

Whenever I approach a new class, I think about how I could teach this topic to various people of different ages in different environments. For example, in one of my last semesters, I took a literature course focusing on two writers. I thought about how that class could be taught using the Internet. I wondered, how would the Internet change the process of reading literature? How would it add or take away from the subjects discussed in class? What additional aspects of the authors or the books would emerge by researching them on the Internet? I continued to think about teaching and the use of computers through the following summer, and this led to my research into the use of computers in education, particularly the use of the Internet in education.

My original intent was to research the use of computers in Social Studies education. This broad topic includes using different programs with computers and a variety of teaching methods for utilizing technology in the classroom. As I narrowed my topic, I focused on the use of the Internet in Social Studies education.

While researching the use of the Internet in Social Studies education, I realized there is a perspective not represented in the literature. Educators, educational theorists, and educational technology specialists have written about the use of computers in education, but one group is underrepresented.

The voices of the parents of the children who being educated are missing from the literature on this topic. There is an abundance of material written for parents advising and guiding the use the Internet with children, but there is a lack of material written from the perspective of the parents, in regards to parental attitudes and expectations about the use of the Internet in education. I decided to investigate what parents had to say about the Internet's impact on their children's education in all subjects, not just Social Studies.

Introduction

Once you learned how to read, did you stop reading? Once you learned how to use the phone, did you stop telephoning? Likewise, once you are caught in the World Wide Web, you will never leave, propose Facemyer and Peterson (1997). The Internet provides us with access to information and communication easier and faster than previous forms of technology. Accessing information online will become common to everyone as the numbers of Internet users is growing exponentially. As Facemyer and Peterson (1997) note, "You can't quit, you will start, and everybody will be online soon". Based on this proposition, what are the implications for schools?

Parents are going to expect schools to be incorporating the Internet into existing curricula, especially as parents become aware of the learning opportunities on the Internet. For example, students can take a virtual visit of the Louvre's art collection at http://www.smartweb.fr/louvre/. They can follow scientific studies of ocean-atmospheric predictions at http://www.coaps.fsu.edu/. They can also visit the Lords of the Earth, a website which deals with the archaeology and anthropology of the ancient Maya, Aztecs, and Incas at http://www.realtime.net/maya/.

Internet technology has the potential of making a tremendous impact on education. Scholars of educational technology have noted that computer-based instruction changes the way teachers interact with students, and they theorize that the Internet will have an immense impact on teachers' roles; yet little studied is how parents will respond to these changes in the classroom and what kind of changes parents would like implemented in the classroom.

Parental attitudes and expectations about the use of the Internet in education are important for local school administrators and teachers to consider when the Internet reaches their classrooms because parental involvement has been shown to have a positive influence on student's academic achievement. My study adds to this conversation by concentrating on the concerns and expectations of the parents in one school district that is facing the demands of the Information Age.

Review of the Related Literature

My study focusing on parental expectations and concerns about the use of the Internet in classroom education supplements and builds on the knowledge base supplied by other studies of parental attitudes toward computer use in education. One study related to my topic of research is a survey study of parental knowledge of and attitudes toward computer use (Rogers, 1990). Rogers (1990) identifies variables that affect parental involvement in children's computer learning and uses his results to suggest methods for developing computer-orientation programs for parents.

The missing voices of the parents are important because parental involvement in children's education has been proven to be beneficial. Studies show that parental involvement in children's education is an important influence on children's academic achievement (Zeigler,

1987; Fantuzzo, Davis, & Ginsburg, 1995). Student success can be predicted by the level of family involvement (Henderson & Berla, 1994). All academic areas appear to be affected by the degree of involvement by parents (Keith, Keith, Troutman, Bickley, Trivette, & Singh,1993). Different variables of parent involvement include the parents' communications with the school, awareness of school operations, participation in school activities, influence in school decision-making, and relationships with teachers (Herman & Yeh, 1983), all of which are important factors when discussing the introduction of computers and the Internet into a school district.

The majority of articles and books about using the Internet in the classroom are written by educators and educational theorists. The materials available that relate to parents generally fall under the category of guidebooks or handbooks for parents using the Internet with their children (D.K. Brown, 1994; Bruno, 1997; Burgstahler, 1997; Gardner, 1996; Garfield, 1996; "Great sites!", 1997; Joseph, 1995; Kehoe, 1997; Mohta, 1996; Neely, 1996). Several studies have focused on the attitudes of parents in regards to the general use of computers in the education of their children (Cardoni, 1987; Davis, 1985; Downs, 1983; Firkin, 1984; Kite, 1995; Quinn, 1991; Rogers, 1990; Tibbits, 1994), but, again, none address parental attitudes towards the use of Internet in their children's education.

The issue of using the Internet in education is part of the larger topic of computers in education. There is an abundance of material available on the use of computers, including materials on the different programs available for computers, and the different methods of including computer technology in the classroom. The literature relevant to this study are the materials that pertain to the use of telecomputing in the classroom. Telecomputing refers to the use of computers to communicate through electronic exchanges such as telephone lines and satellite technology.

The literature dealing specifically with the use of telecomputing in the classroom falls into three main categories: the issues of telecomputing, the educational theory surrounding telecomputing, and the "how to" of telecomputing in the classroom. Each of these categories contain important topics of interest to parents.

Many issues arise when technology is brought into the classroom. Some issues inherent in the use of the Internet in the classroom include: how to deal with author bias, sensitive content, acceptable use policies, equal access to technology, privacy of information, the politics of information, and moral education. All of these issues are relevant to parents who are concerned about their children's use of the Internet.

Determining author bias is an important skill to teach students who are using the Internet because much of the information on the Web is editorial. In addition to editorial materials, teachers and students can access primary sources, which are invaluable to promoting students' development, however students need to be able to analyze and evaluate the source of the material that they find on the Web in order to use the content appropriately (Braun, 1997; Gordon, 1996; Harp, 1996). For example, Gordon (1996) suggests that teachers and students can determine the point of view of the author by examining the links that the author of the web page provides to other websites.

With the use of primary sources, teachers are faced with unfiltered materials. Teachers must be prepared to deal with controversial and sensitive subject matter. Suggestions can be found in the literature for dealing with questionable subjects, as well as examples for how to set up and enforce an acceptable use policy (Heide & Stilborne, 1996; Tally, 1996).

Difficult teaching moments may arise with the use of primary sources because sensitive material is not filtered out, as in most textbooks. As Tally (1996) notes, "For a teacher, a key

challenge is that primary sources faithfully depict the language, thinking, and behavior of historical actors, even when they are out of step with contemporary values - or are even patently offensives" (p. 40). He gives an example of a seventh-grade social studies class that was reading an oral history of a Georgia preacher who, "in his description of life as a slave, tells his interviewer, 'Oh, miss, we was the happiest little niggers in the world'" (Tally, 1996, p. 41). The social studies teacher addressed the usage of the word *nigger* and placed it within the historical and social context of the time of usage. She let the students voice their own feelings and discomforts with the word, and the class established ground rules for its use. The word was to be used "in a scholarly way, as a linguistic artifact, and as historical evidence" (Tally, 1996, 41).

The second category of materials concerning the use of the Internet in education is the educational theory resulting from studies of telecomputing in the classroom. The theories focus on the increasing access to information, the changing role of the teacher, and the restructuring of schools to allow for more cooperative and collaborative cross-disciplinary activities. They offer a vision for the future of education.

The Internet's easy access to information on any subject is making an impact on education. In schools the Internet brings subject matter to students that they would not be able to access through textbooks (Seguin, 1997). Being able to navigate through this information will become vital to the academic success of students. Research skills will become increasingly important as students need to be able to sort through the information available on the Internet (Thome, 1996). Educators will need to develop students' research skills, in order for students to be productive in the workforce as research on the job becomes more prevalent in the Knowledge Age. Niederhauser (1996) emphasizes the need to develop information-savvy students: "Our

society requires individuals who recognize the need for information, can identify and locate it, gain access to it, evaluate it, and then organize and use it effectively" (p. 72).

Further, with the availability of information through the use of the Internet in the classroom, the role of the teacher will change. The teacher will become a guide or coach for students who are generating their own knowledge through the exploration of information on the Internet (Maskin, 1996; Peterson & Facemyer, 1996). Students will create their own learning, and teachers will act as learning managers: "Much of the teaching is reactive; the teacher responds to the teachable moment created by the learner" (Peterson & Facemyer, 1996, p. 56). Learning will be more inquiry-based and learners will "have a large role in setting the learning agenda" (Peterson & Facemyer, 1996, p. 56). There will be a shift away from lecture-based instruction to an interactive and generative method of creating knowledge through the use of educational technology (G. Brown, 1997).

Many scholars of educational technology assert that schools must be restructured to face the new demands of the Information Age (G. Brown, 1997; Facemyer & Peterson, 1997; Niederhauser, 1996). The appearance of technology in schools can help schools restructure to allow for more cooperative and cross-disciplinary activities. Introducing the PIG (Presentational, Interactive, and Generative) continuum, G. Brown (1997) demonstrates that students in interactive/generative seminars benefit by actively using technology in seminars. Presentational seminars are the traditional lecture-based classes with technology used to enhance the presentation by the lecturer. In interactive seminars students are active participants in their learning. Branching to websites through hypertext links is an example of interactive learning with technology. In generative seminars students are the most active with technology as they are generating their own knowledge by using web authoring tools.

G. Brown (1997) shows that students in interactive/generative seminars are more likely to contact experts locally and worldwide through the Internet. The online technology helps them exercise their creativity, helps them clarify concepts and take responsibility for their learning, helps them manage large complex tasks, and helps them interact easier with classmates. These students are also more likely to communicate complaints and/or suggestions to their instructors. Similar results were obtained in the study of Distributed Learning Communities (DLCs), in which students interact with science by viewing science experiments online as they are being performed by professional scientists (Facemyer, Brown, & Peterson, 1997). The students also discuss the results of the experiments with the experts in the field. In DLCs students interact with the subject matter within a community of learners and practitioners.

The final category of literature focuses on the "how to" of telecomputing in the classroom. There is an abundance of materials available in books, articles, and on websites that describe how to use the Internet in the classroom. Some examples for using the Internet in the classroom include: using the Internet for researching, publishing, as a study group, taking a virtual field trip, finding websites for historical primary documents, participating in online projects, developing social studies skills through literature and telecommunications, using a homepage to supplement regular course materials, and using distance learning to learn about cultural diversity (Broughton, 1997; Ford, Dobyns, & Poe, 1997; Newmark, 1997; Sembor, 1997; Urwongse, 1997; Vess, 1997; Wilson, 1997).

The literature that focuses on how to incorporate the Internet into the curriculum is helpful to teachers as well as parents. Students who have parents involved in their education are more likely to succeed academically. All of the suggestions for including the Internet in education can be done with a home computer that is connected to the World Wide Web. Some of

the articles on curriculum integration of the Internet provide steps or questions to ask to help develop an Internet project (Broughton, 1997; Clayton, 1997; Heide & Stilbourne, 1996; Rose & Fernlund, 1997). Another common feature of this "how to" literature is an index of suggested websites for finding information on specific subjects of study or websites for additional resources on the integration of the Internet in education (Crotchett, 1997; Newmark, 1997; Vess, 1997).

Methodology

The purpose of this study was to gather data on parents' perspectives of the use of the Internet in their children's education. The research approach most widely used and accepted for collecting attitude information is the direct approach of self-reporting. The different strategies for obtaining self-reports include questionnaires, interviews, written reports and observations (Simonson & Maushak, 1996). My study relied upon a combination of interviews and questionnaires.

My fieldwork-based project centered on a high school in a Philadelphia suburb. I focused on one issue of telecomputing, that of the use of the Internet in education. I concentrated on parental concerns about the Internet and parental expectations for how the Internet in the classroom would help their children succeed in school and their future workplace.

I gathered data by interviewing five parents involved in the Home and School Association at a local high school. The sample of parents from the association may have stronger feelings about issues concerning their children's education, which may have prompted them to attend the association's meetings. These parents were either in a professional field or a full-time stay-at-home parent. They volunteered to be interviewed after I made a brief presentation at a Home and School Association meeting.

The interviews focused specifically on parental attitudes and expectations toward the use of the Internet in education with questions such as "What change do you see in your children's education with the advent of the Internet?", and "What do you believe the role of the Internet should be in your children's education?"

At the beginning of the interview, I had the parents answer a questionnaire (see Appendix A) and then we discussed their responses. The purpose of the questionnaire and interview was to gather data on parents' computer experience and parents' concerns and expectations for their children's classroom Internet use. The questions were a mix of closed-ended and open-ended questions.

A secondary part of my methodology was the use of the Internet to elicit comments from parents worldwide. One precedent for this technique of information gathering is a research project on non-traditional mothers, which was written for a Master of Arts in Liberal Studies thesis from Dartmouth College (Sherrell, 1996). In her thesis, Sherrell (1996) included the compilation of responses to a questionnaire she posted on more than twelve newsgroups. The questionnaire was designed to capture the experiences of mothers who do not fit the traditional model of motherhood.

I created a website that had a question-and-answer form (see Appendix B) so parents could respond to me electronically. The website was a modification of the questionnaire that I used with the parents of the local high school. I had no control over who responded, but I expected only computer-savvy parents would be able to find the site and respond to the questions. I included a counter as part of my site to record the number of hits, as I expected some parents would visit the site but not respond to the questions. Part of my challenge was to advertise my website electronically through the Internet. I did this by linking my site to eight

search engines using keywords that I expected parents to be searching for information about the Internet. I also posted a message about the questionnaire on fourteen newsgroups that parents might browse for information about education.

With the counter on my website, I was able to determine that the number of visits to the website was three times higher than the number of parents who completed a questionnaire. Ninety-seven people visited the website between January 8, 1998 and March 10, 1998. During that time I received thirty-one completed responses to the questionnaire. The people who visited my website came from every continent of the world. Forty visits were from North America, twelve from Europe, twelve from other (.net, .org), five from Africa, four from Asia, three from Australia, one from Central America, and twenty from unknown region. The majority of people who filled in the questionnaire reported that they found my site from newsgroups. A few respondents found my website from surfing or using a search engine to look for websites about parents interested in computers in education.

The Internet questionnaire included several multiple-choice questions to generate background information about the parents' experience with computers. The main focus of the Internet questionnaire was the four open-ended questions which were meant to gather responses from parents about what effects the Internet would have on their children's education, what their expectations and concerns were about the use of the Internet, and how schools could prevent these concerns from materializing.

Results of the Internet Survey and the Interviews

Parental attitudes and expectations about the use of the Internet in education are important for local school administrators and teachers to consider when the Internet reaches their

classrooms. Parents who use the Internet have certain expectations about the impact of the Internet in their children's education. Parents also have a variety of concerns regarding the use of the Internet, and suggestions for how schools can help prevent their concerns from materializing.

A few parents said that the Internet would only have minimal or no effect on education, but the overwhelming response was that the Internet will provide an tremendous increase in access to information as well as to people. Parents who responded through the Internet questionnaire were well aware of the vast amounts of information available on the Internet. They wrote about the Internet's role as "an additional research resource for education" (Respondent #11)[1]. Not only is the information more readily available, but children are more easily able to interact with the information. Students can freely research by linking from one topic to another while surfing on the Internet. Students can "take control of their own learning" (Respondent #7). As another parent wrote, "I am a strong believer in inquiry-based learning for students of all ability levels. The Internet has so much info available that the students don't have to restrict their interests to those few subjects covered in a very small school library" (Respondent #5).

Many of the respondents wrote about how "the Internet expands the resources of information available…because of the Internet, we have access to all of the people and information available in the whole world" (Respondent #6). The Internet will provide access to information that students might not have had access to in the past. The Internet will "broaden their knowledge [because it] allows access to resources and data never before possible" (Respondent #4). As another respondent wrote, "The Internet will provide instant use of information and images that cannot be obtained in any other way" (Respondent #29). Any topic

[1] Most parents responded to the questionnaire anonymously. Respondents are numbered in the order they were received.

should be available to research through the Internet. It will "provide an invaluable resource of information and communication on any topic anywhere in the world" (Respondent #13).

This expectation for increased access to information was shared by the parents I interviewed. As one mother said, "It is a whole lot easier for us to find more than encyclopedia information for their homework." (Beth)[2]. These parents gave examples of different resources that are available on the Internet and also mentioned the value of having materials on current topics instantly available.

> I think the possibilities for learning about scientific research hot off the press, that kind of thing can be very exciting, or even reading book reviews..., I am sure of the issue of the latest information and feeling like you can access things. (Mary)

> I think for this generation of children, [Internet] access to information is going to be what my generation had in books and encyclopedias. That's the way they are going to find out anything they want to know. I think encyclopedias as a written instrument may become obsolete... Things that you might have to reference in a written volume, on the Internet can be so much more current. Information can be up to the minute. [My daughter] can access world-wide publications which we would not have formerly been able to do. I just think that the availability and the recency of information will be so much more powerful for their generation. (Joan)

The easy access to information was not just an expectation, but also a concern for parents. A few mentioned that they were concerned about scholarly laziness and procrastination because the information could be found at the last minute before the project was due without having to make special trips to the library.

> [The Internet] may make the information more accessible and immediate, [but] it may enable them to postpone the project until it is too late. The president has died, and she can't learn about that president. (Mary)

Along with the increased access, parents felt that the information was easier for their children to find when it was online and less intimidating than having to look through a book. The

[2] All names have been changed to maintain the anonymity of the parents and children.

Internet provides an accessible environment for students to do independent research to find resources to help themselves.

> For [my daughter] to sit down at the computer and to have it on screen in front of her is so much less intimidating than to go to a book and try to find it in the book. She is so comfortable on the computer. It is just an extension of her. So I think that she will much more readily look for extensive information. [Before the Internet] she might have settled with just, "Well, here it is in the dictionary about a duke." I think on the computer she will be interested in going much more in depth and be willing to take the time because it is a medium that she is just very comfortable with. (Joan)

> I would like her to continue to be able to use it as a resource to expand her knowledge in all different areas. I remember when she learned all by herself to get a math tutor on the Internet years ago. I thought that was just the greatest thing. And it was so good for her self-esteem. Her brother was amazed. It was years ago and she found it. And that was a source of great pride. She did it herself. She found help for herself. I thought what a great process. So if you take that to a more sophisticated level. I would like to see that kind of thing going on. (Mary)

The parents interviewed also expected the classroom learning structure to change. None of the parents mentioned lecture-based learning as the beneficiary of using the Internet. Instead, cooperative group work was the desired outcome with the arrival of the Internet in the classroom.

> If [the Internet] is in the school and it is available to everybody, then some of the things we are going towards like group projects [I would expect to be used more]. The kids have an opportunity to work as a group to access whatever data they may need for their project. (Joan)

> I would like there to be more interactive stuff. In the high school what they do is they just sit at the computer and go at the rate that they go, and my son would finish the course in three months and that was that, and they would have a project. I felt that more group projects [would have been better]. (Mary)

These parents are expressing the desire to see move away from the traditional lecture based learning model to a more group orientated and interactive learning environment. Different types of interactive and generative learning environments described by G. Brown (1997) are what most parents would like to see in their children's classroom. They would like to see more

interaction between teacher and student as well as between students. The PIG Continuum is meant to show that lessons can flow between presentational, interactive and generative. If a teacher is giving a presentational lesson (lecturing with the help of multimedia) and a student asks to have a topic explained again, the lesson moves into being interactive (G. Brown, 1997).

Several types of group projects were mentioned as examples of the type of classroom work that the Internet can facilitate. One parent remembered her child working online with materials from NASA for a science project. Other parents gave examples for additional subjects.

> I think [the Internet] can make lots of experiences come alive. [My daughter] did something with a ship in fourth grade that was sailing around the world. They studied geography and they studied the conditions of the weather. That's the kind of thing that is wonderful. It is interactive. They were able to ask questions. So I think the Internet can make history or science become much more immediate and exciting. There are role playing possibilities. Of course, many of those would be possible without the Internet, but the Internet makes it more appealing. (Mary)

> [In math] they can use products, that could be coming from the Internet. It could be that there is a site somewhere that has a set of problems that they could go to and follow through, that kind of web-based module. (Beth)

> I would assume that there are possibilities for linking up with...say in science. A science project would have a science equivalent in maybe a lab somewhere, where [the students] would either submit the data they were collecting or they would get data from the lab. And actually I guess they have done that in the middle school. They had a unit on weather and they did this whole weather thing which had something to do with the Internet... They had a central place that kids from all over the United States were collecting weather data, and they would submit it on a regular basis to this central place. And this central place was graphing storms and tracking things. (Joan)

The resources for information on the Internet are beneficial for teachers, as well as students. Teachers can share ideas and find materials for their classes. One mother gave examples of the types of materials that teachers could find on the Internet, "I think in the K-12 system that there are many teaching modules that it is good for... primary documents, teaching suggestions, those kinds of things" (Beth).

Another shared expectation by parents from the interviews and online survey was the potential for email to increase communication world-wide. Increased access to communication was the second most popular positive response to the effects of the Internet. As one respondent wrote, "Children are able to communicate with others from very diverse social and economic climates" (Respondent #10). This ability to communicate with others of different cultures can be beneficial for very personal reasons, "My child was adopted from Russia. The Internet is a wonderful way for her to learn of her heritage and also maintain contact with other children who were also adopted from Russia" (Respondent #27).

The ability to easily communicate with others can also lead to collaboratively working together on solving problems. This worldwide communication will allow students to work collaboratively with people worldwide: "Communication with other countries, cultures, viewpoints, will make the world seem smaller, problems perhaps more solvable, [and] education more research oriented" (Respondent #25).

One parent that I interviewed expressed her idea for how email can make a change in education. Her vision includes, "Students using email as a means of responding to each other, as a means of talking about work outside of class, as a means of responding to writing, to responding to drafts other people have written" (Beth). She also talked about the changes in communication with the advent of email: "The one thing that I think email does, is that it makes it possible for people to communicate in ways that they haven't, because people have forgotten how to write letters. So keeping in touch with friends, and colleagues in your field, is probably the most revolutionary change that's happened for adults" (Beth).

Another parent spoke about the potential of email to help facilitate student/teacher interactions and parent/teacher interactions. She mentioned the benefit of email to take away some of the emotional content of face-to-face meetings and telephone calls.

> I know that my girls at college use email all the time to contact professors. And I think that the potential is there for us to move that down to as low as people want to go, grade wise. For [students] to email a question in an evening, and have the teacher maybe even get it and email them back in the same evening, so they are not waiting around and waiting around... For a parent to be in touch with a teacher through email is almost the ideal way. Because you have to be concise, you are not likely to be emotional about something, so it kind of takes out that whole thing that you get into when you either have a face to face [meeting] or even a telephone call. I think to email a teacher with a question about something, and to have them be able to email you back is really a cool way to deal with teachers and parents because it takes out some of that emotion laden content that is sometimes there when you are trying to get to the bottom of a problem or a question. So I think that that really is a powerful potential, and one of the things that we are looking to have. That is part of this promise of this installation of the Internet, that every teacher will have in their classroom a computer that will have email. So we can begin to do some of that. (Joan)

The final expectations shared by the interviewed parents were expectations about how using the Internet would provide their children with technology skills that would help them in their future workplace. Some of the skills mentioned were typing, networking, sharing documents, and communicating electronically.

> One very basic thing - she types very fast because she talks to people on the Internet. That will help her, it does help her in school. But I think being able to get the information and communicate it with other people and being able to get it to a network, and to know what to do with a network with be beneficial. (Mary)

> I think the Internet is going to be the way people, one of the huge ways people communicate. And I think, if we don't teach our children those technology skills then they are going to be at a disadvantage. (Joan)

> She will know how to use [the Internet]. She already knows how to download something and send it to someone else. She will enter the workplace and she will already know how to use the Internet and I expect the workplace will have the Internet. It does now so why wouldn't it in the future. (Sue)

> If you have a skill, a communications skill, and most of the other coworkers have that skill, you need that skill to be able to communicate with the other workers. If you are talking about [the Internet] as a research tool, that obviously is dependent on where in the work world she is. (Dave)

> You won't be able to work in the future workplace unless you come in with those [technology] skills. You see that now. It depends on the work of the school district, but the range of what freshmen coming into college know, ranges from being far more sophisticated than the faculty to those who don't know how to turn on a machine. So I don't think anyone going into the workplace will be able to do so effectively unless they have a grasp of how to use technology. (Beth)

In addition to sharing their expectations, the parents also shared their concerns about the use of the Internet. Many of the respondents to the Internet survey, as well as the parents interviewed, were concerned about the ability of children to analyze the material that they are finding on the Internet. Because there is so much information available, "children have to be taught how to find [useful]information, and distinguish good (truthful) information from bad (lies and distortions of the truth). They have to be taught to consider the source and distinguish advertising and partial information from whole information. They really have to learn to read between the lines, and to look for what is not written" (Respondent #6). Another parent wrote, "A problem with using the Internet as a research resource is validating the accuracy of information found there. I use the Internet for research but I am very careful about who I trust in terms of information" (Respondent #11). Internet users need to develop a "critical eye towards information. Just because it is on a computer or the Internet does not make it true" (Respondent #30).

One parent from the interviews mentioned several issues such as analyzing the content of websites, referencing information from the World Wide Web, and evaluating the source of the information.

> I think that students have to be taught how to use it, how to understand what it is that they are looking at. At the moment it is lacking so in many ways it is simply a time waster. Much of what they are looking at is junk… Kids simply roaming around on the Internet is a waste of time, because unless they are directed and have particular projects, they are getting information that they can't analyze… I read something recently that students are putting in their footnotes 'The Web', as if the Internet was just a library that you didn't need any other reference other than saying you got it off the Web, as if that made something valuable simply because it was on the Web…It would be nice if kids knew how to evaluate websites, how to understand whether this information was worth anything, how to evaluate whether this is a reliable source, a government source, or some wacko's web page. I imagine they will become more sophisticated at those kinds of thing (Beth)

In addition to teaching students how to analyze and use the information found on the Internet. Parents were concerned with the amount of preparation teachers had prior to using the Internet in their classroom. One of their concerns was that the Internet would only be an useful tool if the teachers knew how to use it effectively and creatively.

> I think the only way that it is going to become a more useful tool is for educators to understand better what it does and to integrate it into their lesson plans…The teacher has [to have] some idea what he or she wants the students to get out of it. I think that most educators at this point, due to its newness, don't really know how to use it…If it is going to be a tool, then we have got to get the teachers training in how to use it. (Dave)

> This year the use of the Internet has been very unimaginative, I think. In the past years there has been a lot more creativity. This year it has been used to purely get reference materials, which is too bad … I would like a computer science teacher that is good at explaining things. She [my daughter] does not have one. I would like there to be somebody who is a good resource, who would encourage…There is so much that can be done…It is a shame that they hired a teacher who is really not good at explaining… I would like them to have some enthusiastic resources. And I would like the computer labs to be much more available. [I would like the teachers to be] enthusiastic knowledgeable resources. (Mary)

Parents expect teachers, as well as students, to learn how to analyze websites. Many parents called for school districts to support continuing teacher education, including sending teachers to Internet trade shows and providing classes for teachers on how to use the Internet as a classroom tool, as well as "rewarding teachers who develop innovative ways to teach children

how to find the information available to them, discriminate between sources of information, and determine the reliability, validity, and the usefulness of the information" (Respondent #6). One parent was quite adamant in his view towards staff development: "In the age we are approaching, computers will be a tool for everyone and to accept teachers not learning themselves is unacceptable. If a teacher will not make the effort to learn, then they should be a night clerk at a 7-11" (Respondent #30).

Wasting time was another common concern of parents. Some parents focused on the useless information online: "There is a lot of garbage out there, and someone really does need to do some previewing before the kids go wading through what looks like a reasonable link, but is really an ad for something completely different" (Respondent #21).

Another waste of time is not being able to perform effective searches. Several parents wished they and their children knew better methods for finding information on the Internet. Students should be learning how to perform effective searches: "Unless you have very sophisticated search strategies, then you are wasting a lot of time" (Beth).

One father commented on his attempts to help his daughter use the Internet to find information for school work: "The couple of times she and I have tried, I have difficulty because I don't know yet how to do real good searches on the Internet, so it becomes difficult to find things. That is due to the limited base of knowledge that we have and not necessarily that the tool itself is limited" (Dave).

One mother gave a specific example of the difficulty in finding information on the Internet. Her daughter had delayed working on a research project for school, and she realized at the last minute that she couldn't find any information about her subject. Her daughter "chose a leader of a country or she had been assigned a leader who had just died. She didn't know that,

until she got on the Internet and learned the person had died two days before, but she could find nothing on him. She had confidence that she could find a lot about that person, and it ended up that she couldn't, but the time will come that she will be able to" (Mary).

One suggestion from a parent is to "have a school site where sites are grouped by subjects that students are studying. Students would first access these pre-selected sites, then go to general pre-selected research sites, then learn to do effective net searches" (Respondent #26). There is an obvious need to help teachers gain the necessary technology skills to be able to use the Internet effectively in the classroom with their students, as parents are expecting the Internet to be a valuable information tool.

Another issue that concerned a mother was the lack of research available to show that the Internet positively affects students' academic achievement. She mentions the pressure on schools from parents to provide computer access and networked computers in every classroom. She is concerned that parents don't have an understanding of how that will or will not improve their children's learning because there is a lack of conclusive research on this subject.

> In terms of parents, I think there is an awful lot of pressure on the school district to network the schools to have computers in every classroom, but I don't know that people really know what those computers are for or really what difference it makes to the quality of the student learning... I don't think there is any real sense that people understand that [computers in the classrooms] will make any difference at all in student learning, because there really isn't any evidence to say that it will... My concerns are that people don't understand that [the Internet] is just another source of information. I think this will become an issue in the future, when people want to spend money on technology, it isn't clear that it improves student learning which is what it ought to be for at this point. They are interested in putting computers in the schools to show that there is technology there, but they have not done the research to show how this is improving student learning. I think that people forget that the Internet is just one of a whole lot of technology changes. The use of the overhead projectors in the classroom, the use of the LCD projector is just as important as the Internet. The use of CD-ROMs, and laser discs and videotapes, they are all means of delivering education. And the obsession at the moment with the Internet is a sidetrack issue that the Internet is

> not the answer to anything. I don't see the Internet making any difference in the students' abilities to read or rather the lack of reading. I can't see it improving the poor quality of science education. It's not going to improve math education, particularly, unless it improves the quality of teacher training. (Beth)

For another mother advertising was one of the most important concerns. After listing topics she wasn't concerned about, she finally hit upon advertising as a potentially dangerous issue.

> Sexual stuff - no. Racial bigotry, any kind of bigotry or intolerance - no. She is a very good reader. She has very good comprehension, so it is not like things go over her head. So I am trying to think what would she read. I think that she could read an article that would exude enthusiasm about something in a superficial way - advertising. I think that could snow her. That would be my biggest concern... I think really the selling of stuff over the Internet. The advertising is the most. It is really hard. We were looking at buying a car and used [the Internet] Blue Book. They have a very specific Blue Book on the Internet. It is not the same Blue Book that you get at a dealership. And you don't know those things. Those are ways we can all be taken in. And kids are more likely to be taken in, to selling things. (Mary)

The last two concerns discussed in the interviews were pornography and chat rooms. Pornography was not a major concern for these parents of high school age children. The general consensus was that pornography has always been available in other forms. If their children are curious or interested in pornography, then they will find it in other forms, as well as the Internet.

> I am not worried about kids seeing pornography, because kids see pornography. They will get the books. They will get the articles. I [have] read the dirty books. I mean I think that is a part of growing up. I feel that in terms of pornography,...I feel she is on solid ground. I don't worry about her. She is balanced in terms of her views. (Mary)

> There is enough pornography out there. There is enough around, I am not overly concerned. If she got to one of those sites, I don't think it has any great interest to her. (Dave)

Chat rooms concerned some parents because of the danger of meeting strangers who are not what they say they are. In chat rooms, people anonymously discuss a variety of topics and

may misrepresent themselves. Most parents have heard news stories about young girls or boys arranging meetings with strangers they have met in chat rooms, and then being abused or murdered. As their children get older, the parents interviewed have fewer concerns about their children in chat rooms.

> I had concerns two years ago I think. I guess I feel like when kids are younger and they are talking to all different people and they are going into chat rooms, it makes me feel a little bit uneasy, getting chat room friends and all that, but it never got out of hand. It made me uneasy then. I think now I have some confidence that she can handle herself. (Mary)

> I trust [my children] and I think that they would be leery about getting involved in situations where someone could take advantage of them or where they could be exposed to things that they know could be dangerous to them... If we had been on line when they were younger, I think I would have been much more careful and observant, and wanting to limit, whatever that age range does. I would have wanted to know what that meant and probably would have kept them at an age appropriate access level. (Joan)

> I have the same concerns as everyone else, dealing with strangers, who she doesn't know who they are. We have had some discussions. I don't think she is going off and doing lots of wild and risqué things… In her AOL profile, I am concerned that you could probably do some decent identification of her, though it is hard to say because I know who it is. I have some concerns in that regard. I think we have some confidence in her that she has decent sense, I don't see her as the type that she is going to go off all of a sudden and meet Mr. Right. (Dave)

> One of [my children] was in a chat room and someone said something that could easily have had a sexual overtone, and Diane was so astonished that that was the end of the discussion. Their experiences on the chat rooms were mostly aborted because they are on AOL, and they couldn't get on, they are continuously overcrowded. They couldn't even get on and chat with friends that they planned on talking with. I have friends who have children for whom this is a major problem, but Diane is particularly sensible, so I don't have to worry at this point. If I had been concerned I would have signed up with AOL, and done something to make sure that I filtered some things. I would have done something to at least filter out the most obvious problems, pornographic sites or whatever. My husband is a federal prosecutor so I do know of the kinds of issues happening, but it is not really a problem. (Beth)

The parents interviewed had suggestions for schools to help keep children safe online and for preventing access to inappropriate materials. Supervised access of the Internet was an important topic when parents discussed their concerns about the use of the Internet in schools. Parents often mentioned not allowing students in schools access to the Internet unless they were monitored or supervised by an adult. Several parents also suggested the use of computer programs to limit access to inappropriate content on the Internet. Along with supervised access and software to block websites, parental consent forms were discussed as a method to help control where students surf. As one parent suggested, "The students, and their parents should sign a consent form detailing the rules for Internet usage before the students are ever allowed to use the Internet in the school" (Respondent #5). One of the most important suggestions was that students should be taught how to properly use the Internet in the classroom.

> It seems to me that schools ought to have filtering software of some kind, because the librarians can't sit there forever. I think it would be foolish with immature adolescents not to something. I don't think free speech extends to the high school computer lab. I would have no problem with them using filtering software. (Beth)

> There are some kinds of blocks I know that, and I think certainly there is probably a whole huge section of stuff that you would try to block off. I think that there is some kind of contract. A contract that the child signs and maybe have the parents sign also, with the understanding that the child is going to not access inappropriate information. And certainly I think human beings, you know I think if you've got a room where you've got computers like our library or like the writing center, you have to have an adult who monitors, just wanders the room and just walks and is available for help, but who also is also keeping an eye on what is on the screen. (Joan)

> I would think that I would want the schools to develop some type of protocol in terms of how it is used and limit it to educational functions. Most [students] have computers at home, there it is the parents responsibility. I think that you do run the risk of feeding off of the group [in school]. If there are a couple of guys, and they find some site that is 'interesting', you have a group feeding frenzy mentality, as opposed to if you had hit that same pornographic site in the privacy of your own house. It may or may not do anything for you, but you don't have this

> feeding off of others. So I think that it is important to have a protocol to limit those types of opportunities. (Dave)

> How do you figure out when to tell your name and when not to tell your name? Just like you teach your kids the dangers of strangers, then you go talking to someone in the supermarket. And they ask you who was that, and you say no one you know, and they say why are you talking to them because you are not supposed to talk to strangers. You have to figure out for yourself when it is safe, and that is what they are going to have to face. So hopefully we are preparing our children with the tools for their own safety and protection. (Sue)

Teachers can help teach students the proper use of the Internet by creating a home page for their class with links to appropriate websites. As one parent suggested, "If a teacher chooses to have the students do research using the Internet, she should do her own research on the Internet to find the resources she wants the students to use. Then she should write a home page with links to the resources she discovered earlier. This way the students are directed toward the proper resources" (Respondent #5).

At the conclusion of the interviews, I asked parents if they would be interested in learning more about the Internet in education. Several parents responded positively about school sponsored events to help parents understand the potential of the Internet in their children's education and they had suggestions for these programs.

> For parents who are more computer literate, they could always send home a general outline on how it could be used... But then to have something in class where you sit at a computer would be wonderful. They could talk about the kind of assignments... I used to know a lot about what she did on the computer when she was in elementary school because they would talk about it. The teachers would talk about it, and you would see the results. (Mary)

> I would really love parents to have an evening or a couple of different times when they could go into the school and just sit at the computers, and have like a mini-lesson, that the kids would have. I think something like that, just to walk through: what does it mean when your child gets online, what's available to them, what kinds of assignments might they be given, where they would be asked to get online and research things or get information, what other links do we have with other institutions. I know that we have, links between our school libraries and the

> public libraries so the kids can access information, or find out what books are in, or find out what information they could get out at the public library that might not be available in the school's libraries. But a lot of parents are not aware of these things, and I think it would be really helpful. And it is one of the things that I would actually like the Home & School Association to do. Maybe it wouldn't have to be a Home & School meeting, but just to have the Home & School sponsor a night that could be an online night. (Joan)

> I think it is up to the educational community to bring us into the pen, to tell us how they plan to use it. I think that is true in any educational method, the parents generally here [in this community], we are involved with what the school is doing and how they are attempting to do it. So if there is a different mechanism that they are using to teach the kids, then yes, I want to know about it from their perspective, how they are trying to use it, so that if my kid is here [at home] I have some idea of what their teacher is trying to accomplish. (Dave)

Conclusions and Recommendations

This study has examined the expectations and concerns of parents about the use of the Internet in their children's education. Parents worldwide who responded through the Internet survey and parents from a local high school who were interviewed shared many of the same expectations and concerns about their children's use of the Internet. Many of their views fall within the classification of technorealism. Technorealism tries to look realistically at what technology can and can not do for our society.

Mass media either touts the Internet as an utopia for information sharing or demonizes the Internet for its proliferation of pornography and perversions. In an attempt to reach a middle ground, technorealists propose alternatives to the extreme views of mass media by describing the realities of using technology (Shapiro, Shenk, & Johnson, 1998).

One of the propositions of the technorealists relevant to parents is "information is not knowledge" (Shapiro et al., 1998). Parents who were interviewed and parents who responded to the Internet survey were most impressed by the resources of information on the Internet. These parents also showed concern that the plethora of information would require children to be able to

analyze materials online. Reading critically to determine author's bias and to determine the accuracy of the information was mentioned by numerous parents. They shared the technorealist's perspective that the proliferation of data on the Internet requires more thorough analysis and increased cognitive skills in order to evaluate the messages and the information published.

Another proposition of the technorealists relevant to parents is that wiring schools to the Internet will not save schools. The Internet should be viewed as a tool to augment students' education (Shapiro et al., 1998). This concern was voiced by parents who doubted that more computers in schools would lead to better academic achievement. They spoke of the need to teach the teachers how to use these technology tools in the classroom. Teaching the teachers how to effectively incorporate the Internet into the curriculum is an important key to the success of the Internet as a tool in education.

As Shapiro et al. (1998) state, "Understanding technology should be an essential component of global citizenship." Parents in this study expected their children to be learning the technology skills in school that will help them in their future work place. They expected their children to have skills such as typing, understanding networks, communicating online, and sharing documents electronically.

Wasting time was another concern expressed by parents both in the interviews and through the Internet survey. Randomly surfing through web pages and ineffective search strategies were two elements that parents felt contributed the most to wasting time.

Protecting children from inappropriate materials and from strangers were two additional concerns about using the Internet in schools. Parents offered a variety of suggestions to help keep children safe. Some of the suggestions included: software that blocks inappropriate web sites; creating class web pages with links to web sites for researching topics; contracts for acceptable

use signed by parents, teachers, and students; adult monitoring during Internet use; and teaching children what is safe.

This study is a small contribution to the knowledge base that is developing focusing on the Internet in education. Further research is vital to understand the impact that the Internet is having on education. Recommendations for further study include: how do students learn differently by using the Internet to find information, and what kinds of changes in learning occur when students use computers to research and communicate. Questions that will add to the study of parental attitudes about the Internet include: how does parental experience with the Internet affect their attitudes toward the use of the Internet in their children's education; do parents with more Internet experience have different concerns and expectations than parents with less experience; and how does parental knowledge about the Internet affect children's ability to use the Internet.

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Appendix A: Interview Questionnaire

Parent's Experience:	**Your Children's Experience:**
1. Do you use a computer at work? Y or N	1. How many children do you have? _____ (# of children)
2. Do you use a computer at home? Y or N	2. How old are your children? _____ (age of each child)
3. How long have you used a computer? _____ (# of years)	3. Do your children use a computer at school? Y or N
4. What are your primary uses of the computer both at work and at home? (check all that apply) ___ Word Processing ___ Internet ___ Spreadsheets ___ Email ___ Databases ___ Encyclopedias ___ Desktop Publishing ___ Games ___ Presentations ___ Other _____	4. If yes, what are your children's primary uses of the computer in the classroom? (check all that apply) ___ Word Processing ___ Internet ___ Spreadsheets ___ Email ___ Databases ___ Encyclopedias ___ Desktop Publishing ___ Games ___ Presentations ___ Other _____
5. How would you rate yourself as a user? ___ I don't know how to use a computer. ___ Beginner ___ Intermediate ___ Advanced	5. Do your children use a computer at home? Y or N
6. How often do you feel inadequate or frustrated with the computer? ___ Never ___ Sometimes ___ Often ___ Always	6. If yes, what uses of the computer in the home? (check all that apply) ___ Word Processing ___ Internet ___ Spreadsheets ___ Email ___ Databases ___ Encyclopedias ___ Desktop Publishing ___ Games ___ Presentations ___ Other _____
7. How often do you use the Internet? ___ I never use the Internet. ___ 1-3 days a week ___ 4-5 days a week ___ 6-7 days a week	7. How often do your children use the Internet? ___ They never use the Internet. ___ 1-3 days a week ___ 4-5 days a week ___ 6-7 days a week

Your Expectations for Your Children's Use of the Internet in the Classroom:

1. Do your children have Internet access at school? Y or N

2. Do you feel the Internet is an important tool to be used in the classroom? Y or N

3. Why do you think or not think the Internet is important in your child's education?

4. How do you see the Internet changing your child's education? What kind of changes do you see in her education with the use of the Internet?

5. What are some of your future expectations for the Internet in your children's education? What would you like to see more of at school? How should the Internet be used in your children's education?

6. Do you feel the Internet will improve your child's education? How will it?

7. Do you see the Internet helping to prepare her for her future workplace?

8. What are your biggest concerns about your children using the Internet?

9. How should schools prevent your concerns from materializing?

10. Do you feel intimidated by your child's ability to use the Internet?

11. Would you like to learn more about the use of the Internet in your child's education?

Appendix B: Internet Survey

Parents Speak about the Internet

Dear Parents,
Here is your opportunity to voice your opinions about using the Internet in your children's education. This questionnaire is part of my thesis research for a Master of Liberal Arts at the University of Pennsylvania. I am interested in parental concerns and expectations for the use of the internet in education. Please take the time to answer these questions. When using this data in my thesis, I will keep all responses anonymous.

Thank you,
Andrea Grimm
agrimm@sas.upenn.edu

Questionnaire:

Parent's Experience

1. Do You Use a Computer at work? ○ Yes ○ No

2. Do You Use a Computer at Home? ○ Yes ○ No

3. How long have you used a computer? [ ] (Number of Years)

4. What are your uses of the computer both at work and home?
(Check all that apply)

☐ Word Processing	☐ Spreadsheets
☐ Databases	☐ Desktop Publishing
☐ Presentations	☐ Internet
☐ Email	☐ Encyclopedias
☐ Games	☐ AutoCad/Technical
[ ]	Type Other Uses

5. How would you rate yourself as a user?

○ I don't know how to use a computer
○ Beginner
○ Intermediate
○ Advanced

6. How often do you feel inadequate or frustrated with the computer?

○ Never
○ Sometimes
○ Often
○ Always

7. How often do you use the internet?

○ I never use the internet
○ 1-3 days a week
○ 4-5 days a week
○ 6-7 days a week

Your Children's Experience

1. How many children do you have? 1.

2. How old are Your Children? 0 (Ages seperated by commas)

3. Do ANY of your children use a computer at School? O Yes O No

4. If yes, what are your children's uses of the computer in the classroom?
(Check all that apply)

☐ Word Processing	☐ Spreadsheets
☐ Databases	☐ Desktop Publishing
☐ Presentations	☐ Internet
☐ Email	☐ Encyclopedias
☐ Games	☐ AutoCad/Technical
	Type Other Uses

5. Do your children use a computer at home? O Yes O No

6. If yes, what do your children use the computer for in the home?
(Check all that apply)

☐ Word Processing	☐ Spreadsheets
☐ Databases	☐ Desktop Publishing
☐ Presentations	☐ Internet
☐ Email	☐ Encyclopedias
☐ Games	☐ AutoCad/Technical
	Type Other Uses

7. How often do your children use the internet?

- O They never use the internet
- O 1-3 days a week
- O 4-5 days a week
- O 6-7 days a week

Your Expectations for Your Children's Use of the Internet in the Classroom:

1. Do your children have Internet access at school? O Yes O No

2. Do you feel the Internet is an important tool to be used in the classroom? O Yes O No

3. How should the Internet be used in your children's education?
(Check all that apply)

☐ Research	☐ Communication
☐ Devolop Critical Thinking	☐ Entertainment
☐ Problem Solving	Type in Other Ways

4. How will the Internet affect your children's education? What changes do you see in their education?

Type Here

5. What are your expectations for the Internet in your children's education?

Type Here

6. What are your biggest concerns about your children's using of the Internet?

Type Here

7. How should schools prevent your concerns from materializing?

Type Here

Thank you for your participation in this survey. Your responses will remain anonymous when I report the data, but in order to obtain geographical data, please fill in the following fields:

Name(optional): Name

EMail: Email

Address: Address

City, State, Zip: City, State, Zip

How did you find this web site?

☐ Search Engine ☐ Newsgroup ☐ Surfing Links

Other

When you are finished responding to this survey please click the "Send Comments" button below.

Send Comments

If you would like to contact me directly, please send email to agrimm@sas.upenn.edu

This web page was created with help from my very loving, patient husband.